Poster D13

Assessment of hemopoietic progenitor cells in cell culture correlates with cytogenetic analysis of patients with chronic myeloid leukemia.

N. Bilko, *M. Diachenko, I.Borbuliak, I. Dyagil*

National University of Kyiv-Mohyla Academy, Biology Department, Kiev, Ukraine
nbilko@ukma.kiev.ua

Somatic mutation ofthe pluripotent hematopoietic ceil known as BCR-ABL is associated with chronic myeloid leukemia (CML). Such rearrangement often induces formation of the Philadelphia chromosome also known as ***9,22*** translocation that is common to all patients with actively proliferating cancerous hematopoietic cells of myeloid lineages and in some B-lymphocytes. Total of 12 CML patients were studied at the age of 20 to 46 years that received treatment with TKl family drugs such as Imatinib (Novartis co.) between 18 and 36 months. Four out of 12 were not treated prior to start of experiments. Patients had undergone hematological and cytogenetic analysis for the Philadelphia chromosome and molecular investigations with determination ofthe p210 transcript (BCR-ABL) by the PCR methodology. In parallel, clinical tests were accompanied by in vitro investigations in semisolid agar cultures. Colony-forming activity ofthe GM, BFU-E, CFU-GMM was determined. Thus, culture methods along with cytogenetic and molecular methods may form an adequate approach for determination ofthe success ofthe therapy and patient monitoring for CML All patients investigated have shown a positive correlation between cytogenetic methods and in vitro cultures. Full hematological remission and normalization ofthe CFU activity in culture was achieved in 4 non-pretreated patients, who were treated immediately after the diagnosis. The rest 8 patients obtained major cytogenetic response, two of them had the progression of disease 2 years after treatment. Therefore, treatment with TKI family drugs has a strong positive effect on the recovery of normal hematopoiesis in patients with CML.